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Bibliography

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(71) [Applicant]
[Identification Number] 000002325
[Name] SEIKO electronic industry incorporated company
[Address] 6-31-1, Kameido, Koto-ku, Tokyo
(72) [Inventor(s)]
[Name] Inoue Yuichi
[Address] 6-31-1, Kameido, Koto-ku, Tokyo Inside of SEIKO electronic industry incorporated company
(74) [Attorney]
[Patent Attorney]
[Name] Wood Keinosuke

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Epitome

(57) [Abstract]

[Objects of the Invention] the **** eddy which does not need a device with special zero-bight-needle-location detection device, mode setting device, etc., but is used with the common analog type electronic clock -- ****(ing) -- a device and a reset mechanism -- using -- an actual zero bight needle location and a zero bight needle location -- counting -- express as a guide the time information inputted from the time information input means by making the contents of the means in agreement.

[Elements of the Invention] If a user moves a guide 101 to current time or 12:00 location using the **** eddy 12 on the same operating instructions as a common analog type electronic clock and a reset mechanism 11 is canceled the reset information input means 10 -- a zero bight needle location -- counting -- a means 6 -- initializing -- moreover, after the above-mentioned actuation of a user and the time information input means 9 -- the exterior -- time information -- inputting -- time of day -- counting -- time information with set ** for a means 8 a zero bight needle location -- counting -- a means 6 and time of day -- counting -- the drive wave control means 5 considered as the configuration which outputs a rapid-traverse signal and an inversion signal to the drive wave creation means 3 until the comparison result of a comparison means 7 to compare the contents of the means 8 was in agreement. By the above configuration, the time of day which the time information input means 9 inputted is displayed with a guide 101.

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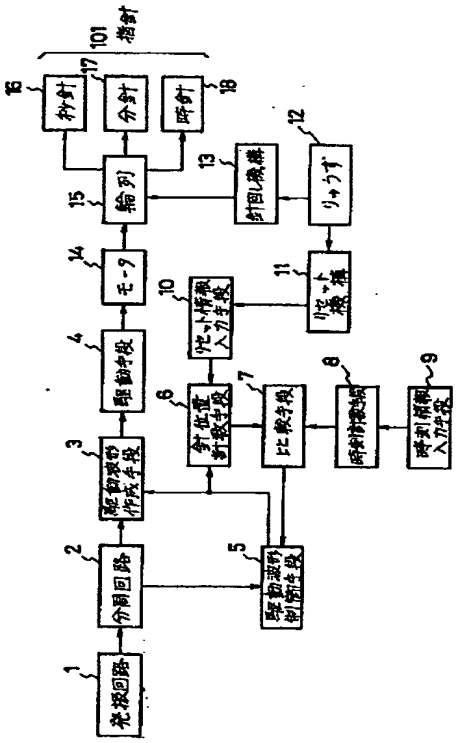

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CLAIMS

[Claim(s)]
[Claim 1] The analog type electronic clock characterized by providing the following. The oscillator circuit which creates a reference signal (1) The frequency divider which inputs the reference signal which an oscillator circuit (1) outputs, and creates the signal of a lower frequency (2) A drive wave creation means to input the output signal of a frequency divider (2) and to create a drive wave signal (3) The driving means which inputs the output signal of a drive wave creation means (3), and passes a current on a motor (14) (4), The motor which transforms into kinetic energy the electrical energy supplied by the driving means (4) (14), The wheel train (15) which transmits rotation of a motor (14), and the guide fixed to the wheel train (15) (101), The **** eddy which turning effort for rotating a guide (101) is ****(ed), and is told to a device (13) (12), The turning effort of a **** eddy (12) is told to a wheel train (15), and is ****(ed). A device (13), The reset mechanism which is interlocked with a motion of the shaft orientations of a **** eddy (12), and operates (11), A reset information input means to detect actuation of a reset mechanism (11) (10), the time of day which memorizes the time information which a time information input means (9) to input time information from the exterior, and a time information input means (9) output, and carries out counting of the predetermined time of day — counting — with a means (8) the zero bight needle location which is initialized by the signal which a reset information input means (10) outputs, and carries out counting of the location of a guide (101) — counting — with a means (6) a zero bight needle location — counting — a means (6) and time of day — counting — the drive wave control means (5) which inputs the result of having compared the contents in which the means (8) carried out counting, and the output signal which a frequency divider (2) outputs, and controls actuation of a drive wave creation means (3)
[Claim 2] The analog type electronic clock which is characterized by providing the following and which displays information with an analog-display means A receiving means to receive an electric-wave signal including the time information which an external predetermined dispatch means sends, and to output the signal about time information (49-55) The reset information input means for inputting the information on reset (10) the time of day which inputs the signal which a receiving means (49-55) outputs, memorizes time information, and carries out counting of the predetermined time of day — counting — a means (8) the zero bight needle location which is initialized by the signal which a reset information input means (10) outputs, and carries out counting of the location of an analog-display means (101) — counting — with a means (6) a zero bight needle location — counting — a means (6) and time of day — counting — the result of having compared the contents in which the means (8) carried out counting being inputted, and with the drive wave control means (5) which controls the actuation which created the driving signal The analog driving means which inputs the signal which a drive wave control means (5) outputs, and drives an analog-display means (101) (4, 14, 15)
[Claim 3] The analog type electronic clock which is characterized by providing the following and which displays information with an analog-display means The reset information input means for inputting reset information (10) A time information input means to input time information from the exterior (9) the time of day which memorizes the time information which a time information input means (9) outputs, and carries out counting of the predetermined time of day — counting — a means (8) the zero bight needle location which is initialized by the signal which a reset information input means (10) outputs, and carries out counting of the location of an analog-display means (101) — counting — with a means (6) a zero bight needle location — counting — a means (6) and time of day — counting — the result of having compared the contents in which the means (8) carried out counting being inputted, and with the drive wave control means (5)

which controls the actuation which creates a driving signal The analog driving means which inputs the signal which a drive wave control means (5) outputs, and drives an analog-display means (4, 14, 15)

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] this invention — a hour hand, the minute hand, and the second hand — or it is related with the analog type electronic clock which displays time of day etc. by display devices, such as a guide similar to them.
[0002]
[Description of the Prior Art] The conventional analog type electronic clock had the zero-bight-needle-location detection device 19 as shown in drawing 2 . as for this zero-bight-needle-location detection device 19, a wheel train 15, the second hand 16, the minute hand 17, a hour hand 18, etc. came to the position using reflection and passage of an electric contact or light — detecting — a zero bight needle location — counting — the contents of the means 6 are initialized. For example, such a zero-bight-needle-location detection device is indicated by JP,61-118683,A.
[0003] Moreover, other conventional analog type electronic clocks had the mode setting device 22 and the switch input means 21 as shown in drawing 3 . The mode setting device 22 is constituted by a slide switch or the rotary switch by the bezel, and sets up usual clock mode, zero-bight-needle-location doubling mode, etc. zero-bight-needle-location doubling mode — the switch signal from the switch input means 21 — an actual zero bight needle location and a zero bight needle location — counting — the contents of the means 6 can be made in agreement For example, such a mode setting device 22 is indicated by JP,56-032071,A.
[0004]
[Problem(s) to be Solved by the Invention] However, the structure of the conventional zero-bight-needle-location detection device 19 and the conventional mode setting device 22 is complicated, the volume which those devices occupy since there are many components becomes large, and the analog type electronic clock which aims at the small thin shape is not turned to. For example, as shown in drawing 2 , when it is going to realize the zero-bight-needle-location detection device 19 at an electric contact, since the electric contact set to the wheel train 15 etc. serves as a load of a motor 14, it is necessary to increase the driving torque of a motor 14. The motor 14 and power source (cell) of the volume only with the large part are needed for increasing driving torque.
[0005] Moreover, when it is going to realize the zero-bight-needle-location detection device 19 using reflection and passage of light, the light emitting device which generates light, such as LED and a lamp, and the photo detector which detects light, such as a photodiode and a photo transistor, are needed. The big electrical energy for driving the big volume and these components

for containing these components is needed, and the power source of capacity only with the large part is needed.
[0006] Moreover, as shown in drawing 3 , also when the mode setting device 22 and the switch input means 21 tend to realize, only the volume which holds these components is required. Furthermore, actuation of setting to zero-bight-needle-location doubling mode, pushing a button switch etc., and setting a guide 101 by a location etc. at 12:00 is needed. It is hard for the user who has used only the common analog type clock to understand this actuation. In the conventional case, the above technical problems occurred.
[0007] Then, in order that the purpose of this invention may solve such a conventional technical problem, it does not need a device with special zero-bight-needle-location detection device, mode setting device, etc., but its increment and large power source of driving torque are unnecessary. The contents of the means are made in agreement. and a zero bight needle location actual at the **** eddy currently used with the common analog type electronic clock, and the actuation which **** and hardly changes to actuation of a common analog type electronic clock using a device and a reset mechanism and a zero bight needle location -- counting -- It is obtaining the analog type electronic clock which displays with a guide the time information inputted from the time information input means.
[0008]
[Means for Solving the Problem] In order to solve the above-mentioned technical problem, this invention is set to an analog type electronic clock. A reset information input means to detect actuation of a reset mechanism, and a time information input means to input time information from the exterior, the time of day which memorizes the time information from a time information input means, and carries out counting of predetermined [predetermined / in every second], for example, the time of day, -- counting -- with a means the zero bight needle location which is initialized by the signal from a reset information input means, and carries out counting of the location of a needle -- counting -- with a means The output signal from a result and a frequency divider which compared the contents of the means is inputted. a zero bight needle location -- counting -- a means and time of day -- counting -- It considers as the configuration which has the drive wave control means which controls a drive wave creation means. Do not need a device with special zero-bight-needle-location detection device, mode setting device, etc., and an increment or the large power source of driving torque are not needed. a zero bight needle location actual at the actuation which hardly changes to actuation of a common analog type electronic clock, and a zero bight needle location -- counting -- the contents of the means 6 are made in agreement and it enabled it to express the time information inputted from the time information input means as a guide
[0009]
[Function] In the analog type electronic clock constituted as mentioned above, as shown in drawing 1 , the user of a clock reaches **** eddy 12, ****, moves the guide 101 of the second hand 16, the minute hand 17, a hour hand 18, etc. to a location or current time at 12:00 using a device 13, and cancels a reset mechanism 11. the reset information input means 10 -- operating -- a zero bight needle location -- counting -- a means 6 is initialized to a predetermined value. moreover, the time information input means 9 -- the exterior -- time information -- inputting -- time of day -- counting -- time information is set to a means 8. the comparison means 7 -- a zero bight needle location -- counting -- the contents of the means 6, and time of day -- counting -- the contents of the means 8 are compared. The drive wave control means 5 operates and a rapid-traverse signal and an inversion signal are outputted to the drive wave creation means 3 until the comparison result which the comparison means 7 outputs is in agreement. According to the above operation, a guide 101 displays the time of day which the time information input means 9 inputted.
[0010]
[Example] Hereafter, the example of this invention is explained to a detail based on a drawing.
(1) The 1st example drawing 4 is the block diagram showing the 1st example of this invention. The approach of time-of-day doubling of the analog type electronic clock in the 1st example is as follows.

[0011] Actuation in case the user of a clock purchases a clock and performs time-of-day doubling first is completely the same as actuation of the usual analog type electronic clock. In drawing 13 , since the timing to which the second hand 16 arrives at a location 70 at 12:00 is seen, it is needed, and ****** 12 is pulled out, and movement of the second hand 16 is stopped. Next, the **** eddy 12 is rotated, a hour hand 18 and the minute hand 17 are united at current time of day, and the **** eddy 12 is pushed in to the timing from which current time became a part for forward. A clock is carried after that, and when the error within +-30 second arises, current time corrects the error within push +-30 second for a push button 42 to the timing for forward. When the error beyond +-30 second has arisen, it is necessary to perform the same time-of-day doubling as the time of purchasing. However, since there is nothing, it seldom poses especially a problem that the error beyond +-30 second arises in an anticipated-use situation.
[0012] The above-mentioned function explains below that it can realize according to the 1st example shown in drawing 4 using the block diagram of drawing 4 , and the timing diagram of drawing 5 . First, it is pushed in, the usual condition 12, i.e., **** eddy, and actuation in the condition that the push button 42 is not pushed is explained. The contents of the second hand location counter 32 and the contents of the second counter 34 are usually in agreement. If time amount passes and the output of the period creation circuit 24 of 1 second falls, the contents of the second counter 34 will be carried out +one, and will serve as the contents of the second hand location counter 32, and an inequality. When it comes to an inequality, 36Qcomparator circuit 1 output is set to 0 (inequality), and the output signal of the normal rotation rapid-traverse period creation circuit 25 is transmitted to the second hand location counter 32 and the drive wave creation circuit 103 through the 1st signal selection circuitry 301. The drive wave creation circuit 103 which received the signal outputs a drive wave, and the second hand 16 is moved through a motor 14. Moreover, the contents of the second hand location counter 32 which received the signal are carried out +one, and it is in agreement with the contents of the second counter 34. If in agreement, 36Qcomparator circuit 1 output will be set to 1 (coincidence), and the output terminal Q of the 1st signal selection circuitry 301 will be set to 0 (idle state).
[0013] In addition, the 1st signal selection circuitry 301 outputs the signal of an input terminal D to an output terminal Q according to the logic shown in Table 1. Next, actuation when the **** eddy 12 is lengthened is explained. If the **** eddy 12 is lengthened from the usual condition, the output of the 1st switch input circuit 211 will be set to 1 (**** eddy ON), and the output terminal Q of the 1st signal selection circuitry 301 will be set to 0 (idle state). Since it will be in a movement idle state, user beam ****** 12 can be rotated in the meantime, and a time needle can be set at current time. If a user pushes in the **** eddy 12, the falling detector 44 will detect pushing of the **** eddy 12, and will reset the contents of the second hand location counter 32, and the contents of the second counter 34. Thereby, the location of the second hand 16, and the contents of the second hand location counter 32 and the contents of the second counter 34 can be made in agreement.
[0014] Next, actuation when a push button 42 is pushed is explained. It will start, if a push button 42 is pushed from the usual condition, and a detector 43 detects the push start of a push button 42, and resets the contents of the second counter 34. Moreover, a push on a push button 42 sets the R-S latch 29. On the other hand, 36Qcomparator circuit 2 output outputs 1 (30 or more), when the contents of the second hand location counter 32 are 30 or more, and when the contents of the second hand location counter 32 are less than 30, it is outputting 0 (less than 30). Therefore, when a push button 42 is pushed, when the contents of the second hand location counter 32 are 30 or more, the R-S latch 29 is reset immediately, and when the contents of the second hand location counter 32 are less than 30, the R-S latch 29 is not reset.
[0015] If a push button 42 is pushed by the above when the second hand 16 is in the location for 30 seconds or more, the second hand 16 will move the hand continuously until the output of the normal rotation rapid-traverse period creation circuit 25 is supplied to the second hand location counter 32 and the drive wave creation circuit 103 and the contents of the second hand location counter 32 and the contents of the second counter 34 are in agreement. Moreover, if a push button 42 is pushed when the second hand 16 is in the location for less than 30 seconds, the

output of the normal rotation rapid-traverse period creation circuit 25 is not supplied to the second hand location counter 32 and the drive wave creation circuit 103, but although not shown in the timing diagram of drawing 5 , the second hand 16 will suspend it until the period creation circuit 24 of 1 second makes the contents of the second counter 34 increase and is in agreement with the contents of the second hand location counter 32.

[0016] According to the 1st example of this invention, second correction is easily realizable as mentioned above only by operating the easiest push button 42 as a time information input means. And the approach of performing time-of-day doubling can suppose that it is completely the same as the usual analog type electronic clock.

[0017] In addition, although the 1st example described the three-stitch analog clock which has the second hand 16, the minute hand 17, and a hour hand 18, it is realizable similarly about the two-stitch analog clock which has the minute hand and a hour hand.

[0018]

[Table 1]

第１の信号選択回路の真理値表

１１	１２	１３	Q
1	*	*	O
0	1	*	O
0	0	1	O
0	0	0	D

注） ＊はドントケア

Q出力のＯは停止状態

(2) The 2nd example drawing 6 is the block diagram showing the 2nd example of this invention. The approach of time-of-day doubling of the analog type electronic clock in the 2nd example is the same as that of the 1st example. The 2nd example improves a part of 1st example. If in the case of the 1st example a push button 42 is pushed when the second hand 16 is in the location for less than 30 seconds, the second hand 16 will stop until the contents of the second counter 34 and the contents of the second hand location counter 32 are in agreement. So, in the 2nd example, when the second hand 16 was in the location for less than 30 seconds, even if the push button 42 was pushed, the second hand 16 reversed and returned and enabled the display of exact time amount immediately.

[0019] Only a different point from the 1st example is explained below using the block diagram of drawing 6 , and the timing diagram of drawing 7 about the 2nd example. In the 2nd example, in order to reverse the second hand 16, the inversion rapid-traverse period creation circuit 26 and the inversion drive wave creation circuit 40 were added. Moreover, when reversing the second hand 16, in order to carry out the contents of the second hand location counter -one, the second hand location counter was made into the updown counter.

[0020] In addition, the 2nd signal selection circuitry 302 outputs the signal of input terminals D1, D2, and D3 to output terminals Q1 and Q2 according to the logic shown in Table 2. It will start, if a push button 42 is pushed from the usual condition in the 2nd example, and a detector 43 detects the push start of a push button 42, and resets the contents of the second counter 34. Moreover, a push on a push button 42 sets the R-S latch 29. On the other hand, 37Qcomparator circuit 2 output outputs 1 (30 or more), when the value (henceforth the difference A of a

counter) which lengthened the contents of the second counter 34 from the contents of the second hand location updown counter 33 is 30 or more, and when the difference A of a counter is less than 30, it is outputting 0 (less than 30). The 2nd signal selection circuitry 302 chooses a normal rotation rapid-traverse drive and an inversion rapid-traverse drive with 37Qcomparator circuit 2 output.

[0021] Moreover, 37Qcomparator circuit 1 output compares the contents of the second hand location updown counter 33 with the contents of the second counter 34, when in agreement, it outputs 1 (coincidence), and when not in agreement, it outputs 0 (inequality). Therefore, the R-S latch's 29 Q output holds 1 after the push button 42 was pushed until the contents of the second hand location updown counter 33 are in agreement with the contents of the second counter 34 by normal rotation or inversion.

[0022] If a push button 42 is pushed by the above when the second hand 16 is in the location for 30 seconds or more, the second hand 16 will move the hand by normal rotation continuously until the output of the normal rotation rapid-traverse period creation circuit 25 is supplied to the second hand location updown counter 33 and the normal rotation drive wave creation circuit 40 and the contents of the second hand location updown counter 33 and the contents of the second counter 34 are in agreement. Moreover, if a push button 42 is pushed when the second hand 16 is in the location for less than 30 seconds, the output of the inversion rapid-traverse period creation circuit 26 is supplied to the second hand location updown counter 33 and the inversion drive wave creation circuit 41, and the second hand 16 will move the hand by inversion continuously until the contents of the second hand location updown counter 33 and the contents of the second counter 34 are in agreement.

[0023] Also in the 2nd example, second correction is easily realizable only by operating the easiest push button 42 as a time information input means as mentioned above. And the approach of performing time-of-day doubling can suppose that it is completely the same as the usual analog type electronic clock.

[0024] In addition, although the 2nd example described the three-stitch analog clock which has the second hand 16, the minute hand 17, and a hour hand 18, it is realizable similarly about the two-stitch analog clock which has the minute hand and a hour hand.

[0025]

[Table 2]

第２の信号選択回路の真理値表

１１	１２	１３	Ｑ１	Ｑ２
1	*	*	O	O
0	0	*	O	D３
0	1	1	O	D２
0	1	0	D１	O

注）＊はドントケア

Ｑ出力のＯは停止状態

(3) The 3rd example drawing 8 is the block diagram showing the 3rd example of this invention. The approach of time-of-day doubling of the analog type electronic clock in the 3rd example is the same as that of the 1st example. The 3rd example improves a part of 1st example. In the case of the 1st and 2nd examples, a user pushes a push button 42 and second correction was

made. Then, instead of a user pushing a push button 42 in the 3rd example, information or the forward part information on a standard wave will be inputted at the time of forward [, such as a time signal of radio,], and time-of-day correction will be made automatically.
[0026] Drawing 9 is the block diagram showing the example of the forward part information input circuit 45 of the 3rd example of this invention. This example raises and explains JG2AS of a standard wave (in Japan, there is JG2AS of JJY of short wave and a long wave) to an example. JG2AS of a standard wave is changed into an electrical signal with the antennas 49, such as a ferrite bar antenna. It is amplified with amplifier 50, a noise component is removed by the filter 51, and the electrical signal is detected with a wave detector 52. The frame mark detection circuit 53 detects a frame mark (positioning signal outputted once to 10 seconds by JG2AS) for the detected signal. The frame mark detection circuit 53 resets a counter 54, when the signal outputted from a wave detector 52 is not a frame mark. A counter 54 counts the signal in every second outputted from a wave detector 52. Numerical 3 detector 55 detects that the contents of the counter were set to 3.
[0027] Drawing 10 is a timing diagram which shows actuation of the forward part information input circuit 45 of this invention. Standard wave JG2AS has sent out data with the bit rate of 1 bit with the burst signal at 1 second. Data are discriminating the frame mark from 0 and 1 as follows. For the signal ON for 1 second between first half 800mS(s), the signal ON for 0 or 1 second between first half 500mS(s) is [1 and the signal ON for 1 second between first half 200mS(s)] frame marks. A frame mark is outputted once to 10 seconds, and 59 seconds and 0 second are continuously outputted twice to a part for forward. The example of the forward part information input circuit 45 of drawing 9 detects this frame mark outputted continuously. In addition, the data of JG2AS have sent out one-set data in 1 minute. The contents of one-set data are parts etc. at the lapsed days from January 1 of the year, the moon, a day, and the time.

[0028] The frame mark detection circuit 53 of drawing 9 detects the time amount from the standup of a wave detector 52 to falling, when the time amount is less than 350 mSs, it outputs 1 continuously, and when the time amount is 350 or more mSs, it outputs 0. A counter 54 counts the standup of the output signal of a wave detector 52. Therefore, a counter 54 is reset by the frame mark detection circuit 53 for every per second, when the output signal of a wave detector 52 is except a frame mark, and when a frame mark is outputted twice in succession, it is counted to 3. Therefore, the timing for forward part + 1 second is detectable with numerical 3 detector 55.
[0029] The 3rd example is explained below using the block diagram of drawing 8 , and the timing diagram of drawing 11 . In the 3rd example, in order to reverse the second hand 16 rapidly or to make it make it not fast forward by normal rotation, the period creation circuit 27 of less than 1 second which outputs a period somewhat shorter than 1 second, and the period creation circuit 28 of 1 second or more which outputs a period somewhat longer than 1 second were added. Moreover, the forward part information input circuit 45 was added instead of the push button 42.

[0030] In addition, the 3rd signal selection circuitry 303 outputs the signal of input terminals D1, D2, and D3 to an output terminal Q according to the logic shown in Table 3. If the forward part information input circuit 45 outputs the timing for forward part + 1 second from the usual condition in the 3rd example, the contents (in this case, 1 second) of the second offset value store circuit 39 will be transmitted to the second counter 35. Moreover, the forward part information input circuit's 45 output of the timing for forward part + 1 second sets the R-S latch 29. On the other hand, 38Qcomparator circuit 2 output outputs 1 (30 or more), when the value (henceforth the difference B of a counter) which lengthened the contents of the second counter 35 from the contents of the second hand location counter 32 is 30 or more, and when the difference B of a counter is less than 30, it is outputting 0 (less than 30). The 3rd signal selection circuitry 303 chooses the drive in a cycle of less than 1 second, and the drive in a cycle of 1 second or more with 38Qcomparator circuit 2 output.
[0031] Moreover, 38Qcomparator circuit 1 output compares the contents of the second hand location counter 32 with the contents of the second counter 35, when in agreement, it outputs 1

(coincidence), and when not in agreement, it outputs 0 (inequality). Therefore, after the forward part information input circuit 45 outputs the timing for forward part + 1 second, the contents of the second hand location counter 32 increase the period of less than 1 second, or in a cycle of 1 second or more, and as for the R-S latch's 29 Q output, 1 is held until it is in agreement with the contents of the second counter 35.

[0032] If the forward part information input circuit 45 outputs the timing for forward part + 1 second by the above when the second hand 16 is in the location for 30 seconds or more The output of the period creation circuit 27 of less than 1 second is supplied to the second hand location counter 32 and the normal rotation drive wave creation circuit 40. The second hand 16 moves the hand by normal rotation with the period of less than 1 second until the contents of the second hand location counter 32 and the contents of the second counter 35 are in agreement, and the hand is moved earlier than 1 second until the second hand 16 catches up with right time amount. Moreover, if the forward part information input circuit 45 outputs the timing for forward part + 1 second when the second hand 16 is in the location for less than 30 seconds The output of the period creation circuit 28 of 1 second or more is supplied to the second hand location counter 32 and the normal rotation drive wave creation circuit 40. The second hand 16 moves the hand by normal rotation with the period of 1 second or more until the contents of the second hand location counter 32 and the contents of the second counter 35 are in agreement, and the hand is slowly moved from 1 second until the second hand 16 suits right time amount.

[0033] Also in the 3rd example, second correction is automatically realizable only by using the forward part information input circuit 45 as a time information input means as mentioned above. And the approach of performing time-of-day doubling can suppose that it is completely the same as the usual analog type electronic clock.

[0034] In addition, although the 3rd example described the three-stitch analog clock which has the second hand 16, the minute hand 17, and a hour hand 18, it is realizable similarly about the two-stitch analog clock which has the minute hand and a hour hand.

[0035]

[Table 3]

第３の信号選択回路の真理値表

11	12	13	Q
1	*	*	O
0	0	*	D 3
0	1	1	D 2
0	1	0	D 1

注）＊はドントケア

Q出力のOは停止状態

(4) The 4th example drawing 12 is the block diagram showing the 4th example of this invention. Somewhat unlike the 1st to 3rd example, the approach of time-of-day doubling of the analog type electronic clock in the 4th example is as follows.

[0036] When the user of a clock purchases a clock and performs time-of-day doubling first, although it is almost the same as the usual analog type electronic clock, the following points differ. Usual analog type electronic clock beam ****** 12 is rotated, a hour hand 18 and the

minute hand 17 are united at current time of day, and the **** eddy 12 is pushed in to the timing from which current time became a part for forward. However, it stretches in the 4th example, ****** 12 is rotated, a hour hand 18 and the minute hand 17 are united with a certain fixed location 70 (for example, 12:00 location), and the **** eddy 12 is pushed in to the timing of arbitration. If the **** eddy 12 is pushed in, a time information input means will operate and time information (at the time a part, a second) will be transmitted to a storage means. Since the second hand 16, the minute hand 17, and a hour hand 18 move with normal rotation or an inversion rapid traverse automatically to the location which is in agreement with the transmitted time information, a user does not have the need for time-of-day doubling.

[0037] Only a different point from the 2nd and 3rd examples is explained below using the block diagram of drawing 12 about the 4th example. In order to control the second hand 16 and the minute hand 17 which constitute a guide 101 from the 4th example, and a hour hand 18, the counter 352 was added at the minute hand location updown counter 331, the hour hand location updown counter 332, the part counter 351, and the time.

[0038] In addition, the 2nd signal selection circuitry 302 outputs the signal of input terminals D1, D2, and D3 to output terminals Q1 and Q2 according to the logic shown in Table 2. If the time information input means 60 outputs the timing for forward part + 1 second from the usual condition in the 4th example, the contents (in this case, 1 second) of the second offset value store circuit 39 will be transmitted to the second counter 35. Moreover, the time information input means' 60 output of the timing for forward part + 1 second sets the R-S latch 29. Moreover, the time information input means 60 transmits a part and the data at the time to a counter 352 at the part counter 351 and the time, respectively. on the other hand — 61Qcomparator circuit 2 output — the second hand location updown counter 33, the minute hand location updown counter 321, and the hour hand location updown counter 322 (a following second —) a part and the second counter 35 from the contents which double the zero-bight-needle-location updown counter at the time, and are only called zero-bight-needle-location counter, the part counter 351, and the time — a counter 352 (a following second —) When the value (henceforth the difference C of a counter) which lengthened a part and the contents which double the counter at the time and are only called time-of-day counter is 6 hours or more, 1 (6 hours or more) is outputted, and when the difference C of a counter is less than 6 hours, 0 (less than 6 hours) is outputted. The 2nd signal selection circuitry 302 chooses a normal rotation rapid-traverse drive and an inversion rapid-traverse drive with 61Qcomparator circuit 2 output.

[0039] Moreover, the contents of the zero-bight-needle-location counter are compared with the contents of the time-of-day counter, 61Qcomparator circuit 1 output outputs 1 (coincidence), when in agreement, respectively, and when not in agreement, it outputs 0 (inequality). Therefore, after the time information input circuit 60 outputs the data of the time and a part, and the timing for forward part + 1 second, the contents of the zero-bight-needle-location counter increase or decrease a normal rotation rapid-traverse period or an inversion rapid-traverse period, and as for the R-S latch's 29 Q output, 1 is held until it is in agreement with the contents of the time-of-day counter.

[0040] By the above, if the time information input circuit 60 outputs a part for the right, the data at the time, and the timing for forward part + 1 second, the second hand 16 and it will be interlocked with with a normal rotation rapid traverse or an inversion rapid traverse, the minute hand 17 and a hour hand 18 will rotate, and a second, a part, and a hour hand 18 will display right time of day.

[0041] Also in the 4th example, time-of-day doubling of a time second is automatically realizable only by using the time information input circuit 60 as mentioned above. In addition, although the 4th example described the three-stitch analog clock which has the second hand 16, the minute hand 17, and a hour hand 18, it is realizable similarly about the two-stitch analog clock which has the minute hand and a hour hand.

[0042]

[Effect of the Invention] A reset information input means to detect actuation of a reset mechanism according to this invention, the time of day which memorizes the time information from a time information input means to input time information from the exterior, and a time

information input means, and carries out counting of predetermined [in every second], for example, the time of day, — counting — with a means the zero bight needle location which is initialized by the signal from a reset information input means, and carries out counting of the location of a needle — counting — a means and a zero bight needle location — counting — a means and time of day — counting — the output signal from a result and a frequency divider which compared the contents of the means was inputted, and it considered as the configuration which has the drive wave control means which controls a drive wave creation means.
[0043] If a user moves a guide to current time or 12:00 location using a **** eddy on the same operating instructions as the conventional analog type electronic clock and a reset mechanism is canceled by the above configuration a reset information input means — a zero bight needle location — counting — a means — initializing — moreover, after the above-mentioned actuation of a user and a time information input means — the exterior — time information — inputting — time of day — counting, if time information is set to a means a zero bight needle location — counting — a means and time of day — counting — since the drive wave control means outputted the rapid-traverse signal and the inversion signal to the drive wave creation means until the comparison result of a comparison means to compare the contents of the means was in agreement, the display became possible with the guide about the time of day which the time information input means inputted.
[0044] moreover — without it needs the mode setting device constituted by the zero-bight-needle-location detection device in which reflection and passage of the electric contact or light which was the need conventionally were used or the slide switch, the rotary switch by the bezel, etc. — the operating instructions same moreover as the conventional common analog type electronic clock — a zero bight needle location — counting — it became possible to make the location of a means and an actual needle in agreement. That is, according to this invention, the display became possible with the guide about the time of day which the time information input means inputted on the same operating instructions as the small thin conventional analog type electronic clock moreover.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the block diagram showing one example of the typical configuration of the analog type electronic clock of this invention.
[Drawing 2] It is the block diagram showing the 1st example of the conventional analog type electronic clock.
[Drawing 3] It is the block diagram showing the 2nd example of the conventional analog type electronic clock.
[Drawing 4] It is the block diagram showing the 1st example of this invention.
[Drawing 5] It is the timing diagram which shows actuation of the 1st example of this invention.
[Drawing 6] It is the block diagram showing the 2nd example of this invention.

[Drawing 7] It is the timing diagram which shows actuation of the 2nd example of this invention.
[Drawing 8] It is the block diagram showing the 3rd example of this invention.
[Drawing 9] It is the block diagram showing the example of the forward part information input circuit of the 3rd example of this invention.
[Drawing 10] It is the timing diagram which shows actuation of the forward part information input circuit of this invention.
[Drawing 11] It is the timing diagram which shows actuation of the 3rd example of this invention.
[Drawing 12] It is the block diagram showing the 4th example of this invention.
[Drawing 13] It is the external view of the analog type electronic clock of this invention.
[Description of Notations]
1 Oscillator Circuit
2 Frequency Divider
3 Drive Wave Creation Circuit
4 Driving Means
5 Drive Wave Control Means
6 Zero Bight Needle Location -- Counting -- Means
7 Comparison Means
8 Time of Day — Counting — Means
9 Time Information Input Means
10 Reset Information Input Means
11 Reset Mechanism
12 ****-**
13 it **** — Device
14 Motor
15 Wheel Train
16 Second Hand
17 Minute Hand
18 Hour Hand
101 Guide